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JAN WATERINK (1890-1966), A DYNAMIC DUTCH PIONEER OF SPECIAL EDUCATION

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During the first half of the twentieth century the interest in special education was increasing in Western countries. This was a reaction to the inclusive practise of the nineteenth century school systems. Most handicapped children were kept home or sent to regular schools, which neglected their special needs. The introduction of compulsory education, in the Netherlands in 1900, stimulated the founding of special schools and the development of tests and further research on children with behavioural and learning problems. In the Netherlands Jan Waterink (1890-1966), professor at the Vrije Universiteit in Amsterdam took a leading part in this field of research. This paper describes his career and contribution to the academic child studies and special education. His pioneering work in his Psychological Laboratory and Paedologisch Instituut *in Amsterdam, aimed at integrating scientific research and caring concerning disabled and* problem *children. Many pedagogues and psychologists from abroad visited the institute and considered it to be a model for a clinic in their own country.*

Introduction

Jan Waterink belonged to the first generation of Dutch academic pedagogues. He lived in a period in which there was a growing interest in disabled children and their education both in the Netherlands and abroad. Contrary to current times in which the aim to include these children in mainstream schools is dominant, until the 1970s education of disabled children was characterised by exclusion (Safford & Safford, 1996; Winzer, 1993). By implication, the selection of children for special education and care was of significant value. The measurement of intelligence was important and numerous tests were introduced, to which Waterink contributed by his psychological laboratory (1927) and children's clinic Paedologisch Instituut (1931). This clinic took the interest of foreign doctors, pedagogues, psychologists and psychiatrists who considered it as an example for their own countries. Our paper addresses Waterink's contribution to child studies and special education by exploring the way in which he succeeded to integrate research aimed at the collection of scientific data and care for disabled and *problem* children. The description of his life and work is divided into three parts. First we concisely describe the prelude to the rise and success of Waterink's work: the Child Study Movement, which lead to an increasing interest in special education, tests and diagnostics. Then we explain the emerging star of Waterink and his accomplishments in the Netherlands, most particularly his children's clinic and psychological laboratory which were famous beyond Dutch boarders. The article ends with an evaluation of his contribution to special education.

The prelude: The child study movement

Since the last decades of the nineteenth century the interest in school hygiene, children's disabilities and special education was on the increase. Many countries introduced compulsory schooling, juvenile courts, child saving programs and school doctors. With her *Barnets Arhundrade* (*The Century of the Child*, 1900) the Swedish activist Ellen Key was not crying in the desert: her message found receptive ground. Children and their welfare became a major concern (Marland & Gijswijt-Hofstra, 2003; Fagan, 1992; Depaepe, 1993).

The expanding interest in children's care also meant an impulse for the study of children and their education. In the USA, G. Stanley Hall was the founding father of the so-called child study movement in the 1880s. With the scientific study of children, Stanley Hall pursued a practical aim: if teachers

were better informed about the natural characteristics of children, education would improve (Fagan, 1992; Appley, 1986). A pupil of Stanley Hall, the German Oscar Chrisman, who emphasised the necessity of integrating the scattered insights of childhood, coined the term *paedologie* for the scientific study of the child in his dissertation *Paidologie: Entwurf zu einer Wissenschaft des Kindes*, which he defended at Jena University in Germany in 1896 (Depaepe, 1993). Terms like *pedology* and *pedological* soon became fashionable in the Netherlands, France, Germany and Belgium (Van Gorp, 2005; De Wit, 1982). The first Dutch pedological conference, held in 1913 in Amsterdam, was a testimony to the increasing interest in integrated child studies. The participants were doctors, school inspectors, psychiatrists, neurologists and teachers. They talked, among other things, about the measurement of intelligence, fatigue, experimental research on personality and the implementation of legislation concerning delinquent and psychopathic children (*Verslag van het Eerste Nederlandsche Congres voor Kinderstudie, 1913*). The conference stimulated the founding of a society for the study of pedology (*Paedologisch Gezelschap*, Amsterdam, 1915) and a journal devoted to child studies (*Kinderstudie*, 1916-1925). The main aim of pedology was improving the aid to children on the basis of solid information about development and problems of childhood based on observation, tests, experiments and questionnaires (De Wit, 1982; Dane, 2006).

An extra stimulus for research was the increase in numbers of special schools and children's homes for disabled children from four in 1900 to 146 in 1940 in the Netherlands (Graas, 1996). The main question was when and why a child would need special education or had to be placed in a children's home. One of the academic researchers who set to work was Jan Waterink.

The rising star and successes of Waterink

Like Stanley Hall, Waterink had studied theology. He started his career as a minister (1913-1926), initially in a village, then in a small town and finally in the Dutch capital, Amsterdam. As a young minister he was confronted with cases of misbehaviour of youngsters and adults. Waterink felt that his study at the Reformed Theological College in Kampen had not prepared him to deal with such practical issues. Therefore, he decided to enrol at Bonn University in 1917 to study ethnology and psychology. The church council granted him weekly a day off for study activities. In 1919 he entered the Calvinist VU University in Amsterdam in order to obtain a Master's degree in theology and after passing his exams he started writing his dissertation. In this dissertation, *Plaats en methoden der ambtelijke vakken* (*Pastoral theology: its place and method*, 1923), he combined his theological and psychological interests; the dissertation was partly based on fieldwork with questionnaires to determine children's reception of doctrinal texts.

In 1926 Waterink was appointed associate professor in pedagogy at VU University, which had become a compulsory academic discipline in 1926 in the Netherlands. The new academic pedagogues were primarily interested in the professionalization of teachers, educational reform, learning problems and advising parents and teachers. Waterink was especially devoted to the research on problematic children. In his inaugural lecture Waterink defined pedagogy as a discipline in which theoretical reflection should go hand in hand with observation, statistics and experimental research (Waterink, 1926). In 1927 Waterink started his lectures in pedology, psycho-technology and pedagogy for students of theology, philosophy, law and medicine that wanted to specialise as a psychologist or pedagogue (Proceedings VU Directors, 19 March, 1927). Moreover, he also began to provide courses for teachers.

That same year (1927) he got permission to use a section of the laboratory of the Valerius Clinic, which had been the first university clinic in the Netherlands for both care and research of adults with psychiatric and neurologic diseases (Van Strien, 1993), for experimental pedagogy and established a psychological laboratory. Waterink also drew up a plan for a children's clinic. In 1931 his clinic for research and observation of *abnormal* children, the *Paedologisch Instituut*, was opened. By then he was full professor as well. Due to his extended scientific activities his associate professorship had been changed in 1929 into a full professorship not only in pedagogy, but also in pedology and applied psychology (psycho-technics), while his teaching commitment (pedagogy) was enlarged with pedology, psycho-technology and applied psychology (Mulder, 1989).

Paedologisch Instituut (PI)

Waterink's *Paedologisch Instituut* was the first children's clinic with an academic status in the Netherlands. Although the daily routine was Christian and only Christian staff was appointed, the clinic practised an open admittance policy. In the starting period, the 1930s, the PI cooperated with *'s Heeren Loo*, an organisation that consisted of several homes for mentally disabled and problem children (Jak, 1993, 1999). *'s Heeren Loo* was responsible for the building and exploitation and the VU for the research program and salaries of the research assistants and director Waterink. This was a

win-win situation for both institutions: The advantage for '*s Heeren Loo* was that it acquired direct access to a research department, which increased its reputation; VU University was interested because it enhanced its importance as a private Christian university that wanted to make science profitable for society. Since the VU was dependent on gifts and contributions, it was important to show its supporters that science could lead to useful results (Waterink, 1930; Van Deursen, 2005).

The PI was to provide boarding facilities, which was also defended from a pedagogical and research point of view: the results of tests were thought to be more valid when the child was familiar with the climate, the laboratory assistants and environment. While tested the child should feel at home and comfortable. This was especially important for the target group of seriously and multiple handicapped children, who needed continuous observation to be able to determine which clinic or school was appropriate after leaving the institute.
The opening of the institute was in January 1931. Unfortunately, the desired building was not yet vacant, but utilization of a section of the Valerius Clinic was granted. Because of the limited space, only boys to a maximum of 22 could be admitted. They had to sleep in one big room, which was separated from the neighbouring room of the nurses by a door with a gauze window for the continuous observation of the children. According to the agreement with *'s Heeren Loo*, more than half of the pupils came from one of its homes, in particular from the department for children with behavioural problems. The rest consisted of pupils who had visited Waterink's consulting hours with their parents. They stayed for two or three months while being observed and tested in order to give pedagogical advice to parents, teachers and caretakers and to determine which home or school was appropriate after leaving the clinic. The intended bigger building was opened in May 1933. Subsequently the capacity increased to eighty boys and girls, who stayed approximately for three to fourteen months. Their age varied from three to twenty years. From then on the clinic also admitted children from the court of justice (Rietveld-van Wingerden, 2006; Breimer, 1989).

Waterink regularly made tours to speak at conferences, to visit children's homes and laboratories and to meet colleagues, not only in the Netherlands but also in countries like Hungary, Switzerland, Germany, South Africa and the USA. He also used these trips to make his laboratory and clinic more widely known. During the first two years some two thousand persons visited his clinic of whom 78 were foreign medical doctors, specialists and professors (Proceedings Paedologisch Instituut, 1933). They wrote their comments in a guest book. Prof. Heuyer from Paris noted: *Je quitte l'Institute Pédologique avec un sentiment d'admiration et d'envie*. The Norwegian delegate Miss Dr. N. Hoel declared: *Es ist mir eine grosse Freude gewesen das Institut zu sehen. Wenn man herum reist bekommt man eine gute Gelegenheit zu vergleichen. Im Vergleich mit England und Deutschland is mir die Grundlichkeit und systematisierte Arbeit aufgefallen. Bis jetzt habe ich in Wirklichkeit in den vielen Ländern wo ich gewesen [bin] sowas nicht gesehen. Ich hoffe [dass] man in Norwegen wenn man ein ähnliches Institut begründen soll, sehr viel hier lernen konnte. Ich hoffe [dass] die Resultate der Arbeit hier […] überall bekannt [werden]* (Proceedings Peadologisch Instituut, 1937, 4).

New tests
When Waterink started his laboratory in 1927, academic research concerning children was rather underdeveloped in the Netherlands. Assistants tested the children who visited Waterink's consulting hours. While he talked with the parents, he also observed their interactions with the child. Most parents left the building having received some pedagogical advice. After 1931, when the children's clinic was opened, he sometimes advised to keep a child in the clinic for a longer period of observation. This did not only benefit the children themselves, they were also of service to Waterink: they were living examples to illustrate his lectures for students, they were used for the development of new tests, offered *material* for case studies, and finally, the observation of these *abnormal* children would improve our knowledge of normal development (Waterink, 1935a).

Together with his assistants, Waterink developed instruments for the measurement of intelligence, motor functioning and the ability to reproduce, memorize, reflect, think and react. He considered the Binet-Simon test (1905, translated into Dutch in 1919) too limited and not appropriate to assess the intelligence of children with speech impediments and the seriously handicapped. Moreover, he argued that intelligence was a complex issue, also determined by perception, experience of time and space, motor function, memory, reaction capacity and logical thinking. Therefore, the laboratory complemented the Binet-Simon with a lot of other tests like puzzles, games and electric measurement of reaction speed. Some of them were developed by the laboratory, like the *cord board* in which a child had to lead a cord along a white track on a black board marked with pins. Most of the tests were

paper-and-pencil tests with pictures in which the child had to search for differences, similarities, order and faults (De Wit, 1992, Waterink 1935a). These tests were categorised in an internal document called *Het Gulden Boek* (The Golden Book).
As most of the pupils before 1941 were seriously mentally handicapped, the laboratory time and again searched for better instruments to measure their intelligence. Waterink's chief assistant doctor R. Vedder devoted his dissertation to this topic by focussing on the reproduction and handling of geometric figures. Two hundred normal and one hundred mentally disabled children were involved in his research. He discovered that the incapacity to handle these figures had nothing to do with motor functions but with perception. Vedder's research was important for the assessment of the intelligence of seriously mentally disabled children (Vedder, 1939; Proceedings of the Paedologisch Instituut, 1939). Waterink believed that this new instrument was a good supplement to the Binet-Simon test.
Gradually projection tests were introduced to assess personality, feeling of well-being, empathic capacities and relationships with parents, siblings and peers. First of all came the Rorschach (1921) test, in which the child had to tell what it saw in a inkblot, later on followed the Children's Apperception Test (CAT), the *tree-test* and *village-test*. In, the CAT children were stimulated to tell a story in response to pictures of animals, in the tree-test they had to draw a tree and in the village-test the child played with miniature toys (farmstead, animals, children, adults, chairs) (*Het Gulden Boek*, ca 1952; Dane, 2006).

Innovative diagnostics and new treatment
Initially, diagnostics and treatment were strongly oriented towards medical routines. Far into the 1950s the assistants wore white clothes and the nurses' white-and-blue uniforms. From the beginning doctors belonged to the team of the laboratory and clinic. They did a medical intake in order to determine whether hereditary factors were involved (Waterink, 1935b). The physicians also searched in the medical history of the child for illnesses like meningitis, encephalitis and small pox to investigate if these were the cause of the child's mental condition. When examining the body they looked for failures in hearing, vision, motor function, blood, urine and lungs. Sometimes they found deafness or tuberculosis as an additional problem. This medical orientation was common in youth care until the early 1960s (De Beer, 2004; Trent, 1994; Safford & Safford, 1998; Marland & Gijswijk-Hofstra, 2003). The medical treatment was also necessary considering the target group, because part of the clients suffered from additional corporal handicaps and diseases. A surgeon treated children with deformities of the body, a clubfoot or tonsillitis (Proceedings Paedologisch Instituut, 1932-1940).
The physicians were innovative in applying new inventions. One of them was the use of X-rays after 1932. Those from the hand bones served as a means to check if there was stagnation in growth. This was important to track metabolism diseases, which could be responsible for dysfunction of the brains as well. X-rays were also used for examining the brains and spinal cord by inserting air into the spinal cord. After 1945 the EEG was introduced for the research of cerebral functioning.

Every child that entered the clinic underwent an extensive screening, because the diagnosis with which the child entered the clinic was not rated very highly. Mostly it was too fragmentary and not based on solid investigation. The process of diagnosis was intended to elucidate the whole personality of the child (Waterink, 1933). Intelligence was important, but so were speech, perception, and experience of time, motor skills, accuracy and courtesy. Waterink argued that the assessment of the child should be directed at an understanding of the child as a personality with its own habits, ways of thinking and perception of the environment. He emphasised the need of a good relationship with the child: the child should feel at ease. He advised the laboratory assistants and later on the psychologists of the institute not to start investigating the child before both had laughed about something (Wijngaarden, 1961; Waterink 1935a; *Het Gulden Boek*, ca. 1952). To assess its personality the child was observed while being tested or at play. The sandbox, toys, clay and drawing were often used to instigate a play situation. Not only was the child observed, it was also imperceptibly invited to talk about itself (Rietveld-van Wingerden & Groenendijk, 2006).
More than once this solid investigation resulted into a totally different diagnosis than the one with which the child had entered the clinic. Sometimes a child was labelled as mentally disabled at the intake, but turned out to have higher than average intelligence. They had failed at school because the teacher and the educational subject matter did not challenge their interest and abilities, and subsequently they had become uninterested, frustrated and lazy. The advice was to let them skip a class (Jak, 1999; Waterink, 1937a). Other children suffered from additional problems, which had influenced the outcome of the intelligence test, i.e. deafness or endocrine failures such as the malfunctioning of kidneys or the thyroid gland. A low score on Binet-Simon could also be the result of a neurosis. This interest in a clear diagnosis was more than a matter of searching for the causes of

dysfunctions and trying to heal them. The main aim was to provide caretakers with adequate pedagogical advice when a child left the clinic. This advice sometimes betrays the dated perception on parents. For instance, Waterink believed that neurosis was hereditary, one of the parents or both had the same *disease*. Therefore, they were not suitable for their educational task and had worsened the problems of the child. In that case the child could not return home but was sent to a children's home (Waterink, 1935b).

After the diagnosis was made, Waterink's laboratory and clinic treated children with particular psychic problems according techniques derived from the rather new behavioural psychology and psycho- analysis. In 1935 Waterink and his chief assistant Vedder reported the successful application of behavioural therapy to three young pupils (three to five year olds) who had lost their speech as a result of a psychic trauma: the noise of an aeroplane (Jetty), a mask during carnival (Wim), and exercises of soldiers (Jan). They were not only mute, but also anxious and incontinent. The therapy consisted in exposing the child gradually to the things it was frightened of. In the case of Jetty this procedure successively consisted of telling stories about aeroplanes, showing pictures, playing games, and at last a visit to the airport. Wim was confronted with a very small mask that was gradually made bigger and more colourful. Thanks to the therapy all three pupils had found their tongue again, while their other problems also disappeared. The authors compared their findings with outcomes of research abroad. The article appeared in French as well (Waterink & Vedder, 1936).
Although Waterink was critical with respect to Freudian psychoanalysis as an all-explaining sexual doctrine, he nevertheless emphasised the impact of early failures of parents and of insufficient attachment on the later development of the child (Waterink, 1931). His attitude towards Individual Psychology was fairly positive, especially with regard to the Adlerian conception of neurosis (Bakker, 1998; Groenendijk & Bakker, 2002). Waterink even borrowed Alfred Adler's concept of *Minderwärtigkeit* (inferiority): Mentally retarded children may develop feelings of inferiority when school and parents are too demanding. Waterink advised educators to adjust schooling and future perspectives to the capabilities of the child and to stimulate its feelings of self-esteem. Particularly for these children Waterink pleaded to determine their future profession on the basis of the interests of the child (Rietveld-van Wingerden, 2006).

Waterink was strongly convinced of the need to give *his* children a clear perspective on a suitable vocation: if these children would have an idea about their future employment, they would work harder, because they would have more motivation to invest in their own development. He once told of a thirteen-year-old idiot boy who came to the clinic because of serious behavioural problems. He did not listen to his parents and was often angry. His prime activity was playing with little stones in front of the house. The laboratory discovered his interest in colours and forms. The assistant gave him coloured soft balls and when he returned the boy had made a colourful composition and was in an enthusiastic mood. For the first time a real contact was possible. He became susceptible to comments and positive stimulation and less angry and frustrated. He also learned to weave and even embroider (Waterink, 1933).
Time and again Waterink stated that intelligence was not the most important feature of the child's future success. He distinguished *learning intelligence* from *life intelligence* (Waterink, 1937b). A child with low learning intelligence may have other personal traits, which are of greater significance for its participating in society, while a child with a higher intelligence may be socially underdeveloped. Special cases were presented in year reports, lectures, books, and in medical, psychiatric and psychological journals. Often these cases were confronted with the outcomes of research from abroad such as Eugène Apert's research on mental retardation. In 1936 a twelve-year-old girl was sent by one of '*s Heeren Loo* homes to be observed. The team discovered that this girl suffered from the rare syndrome *acro cephalo syndactylie*, first described by the Frenchman Eugène Apert in 1906. In searching for further literature, they discovered that Jacob De Bruin, professor in pediatrics, already extensively described this girl when she was seven weeks old. Therefore, her development could be described from early infancy. Physically the child was normally developed, except that she had webbed fingers. Mentally the child functioned on a very low level (Proceedings Paedologisch Instituut, 1937). Another case was a ten-year-old boy, about whom Vedder reported in the Dutch medical journal *Nederlands Tijdschrift der Geneeskunde* (July 18, 1936). He concluded that the boy suffered from autism and schizophrenia as described by the Swiss Manfred Bleuler.
Among the special cases were also children with learning problems like dyslexia, a problem which became recognized in Dutch educational practice not in the least because of Waterink, who had been paying attention to this disorder by diagnosing and developing educational tools since 1935 (Waterink, 1937a). It was not before the end of World War II that the problem of dyslexia appeared in Dutch

educational journals. Some children with dyslexia were admitted for observation and research between 1935 and 1937. Waterink discovered that these children usually made many mistakes in dictations, not because of a mental deficiency (their intelligence was normal or even above average), but because of a failure in perception of forms and sequences. Unfortunately, their teachers often assessed them wrongly. With the research the clinic, in cooperation with the PI school, aimed to develop the tools to help dyslectic children in their own schools and homes.

Evaluation

After the Second World War the clinic gradually lost its academic character, although Waterink denied this change. In theory he was right (it remained a university clinic), but in practice the clinic no longer differed much from other children's homes. The laboratory separated from the clinic and the scope changed to care and treatment.

When we evaluate Waterink's contribution to the development of special education and care we do have to keep in mind the concrete historical context. The expanding special education needed tools for selection and treatment of disabled children. With his children's clinic and accompanying laboratory, Waterink was a pioneer and a leading man in the Netherlands. He propagated a multidisciplinary child-centered approach and contributed to the new academic disciplines of psychology and pedagogy by training psychologists and pedagogues, developing tests and writing case studies based on careful observation and guided by available scientific knowledge. His clinic has been the example for other university clinics and he has laid foundations, which future generations of academic researchers could and would build upon. The PI itself changed into a psychiatric children's clinic after the 1980s and the cooperation with VU University departments of developmental psychology, clinical psychology, child psychiatry and special education increased. By now children with serious behavioral and social-emotional disorders are observed and treated by a multidisciplinary team with close connections to the academic world. Finally, current generations of psychologists, pedagogues and psychiatrists rarely look to the past; they tend to use relatively recent insights of empirical research to develop new methods of treatments.

This article has given an example of a figure that shows that history has more to offer than an interesting read. While many may believe that his methods are outdated and therefore not of interest to them, his views may still serve as an inspiration for reflection. For example, his conviction that children with behavioral and learning difficulties need a multidisciplinary approach in which *all* those involved in the treatment and education of the child collaborate still has a lot of currency. However, he is probably best seen as an exemplar to us for his professional character. Particularly his courage to take unbeaten tracks, his belief in and focus on the possibilities for children instead of their shortcomings, and his dedication may truly serve as an example to future generations.

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